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EXAMINER

CHO, UN C

ART UNIT PAPER NUMBER

2687

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,268

Applicant(s)

NELSON, RODERICK

Examiner

Un C. Cho

Art Unit

2687

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/10/2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 8, 9, 11, 12, 18, 19, 21, 30, 32 – 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haymes et al. (US 6,650,896 B1) in view of Rahman (US 6,445,916 B1).

Regarding claim 1, Haymes discloses a method of monitoring performance of a wireless system, comprising: transmitting a communication signal from a mobile wireless to a radio base station (mobile station and base station are in radio communication, Haymes, Col. 2, lines 44 – 46); obtaining

location information of the mobile wireless device by analyzing the communication signal (mobile station provides GPS coordinates, Haymes, Col. 4, lines 37 – 51); evaluating the performance of the wireless system using the communication signal received from the mobile wireless device and the location information of the mobile wireless device (Haymes, Col. 3, lines 34 – 46).

However, Haymes as applied above does not specifically disclose obtaining uplink performance parameters associated with the communication signal and evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the mobile wireless device. In an analogous art, Rahman discloses obtaining performance parameters associated with the communication signal and evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the mobile wireless device (Rahman, Col. 5, lines 4 – 30 and Col. 11, lines 1 – 19).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to provide the technique of Rahman to the system of Hall in order to provide a communication system featuring a quality of service evaluation that can reliably operate in a changeable quality of service environment.

Regarding claim 2, Haymes in view of Rahman as applied above discloses wherein the step of evaluating the performance of the wireless system

is performed in real-time (actual quality of service level is measured, Rahman, Col. 8, line 64 through Col. 9, line 17).

Regarding claim 8, the claim is interpreted and rejected for the same reason as set forth in claim 1.

Regarding claim 9, Haymes in view of Rahman as applied above discloses obtaining location information of the wireless device is accomplished using a global positioning system unit in the wireless device (Haymes, Col. 4, lines 37 – 51).

Regarding claim 11, the claim is interpreted and rejected for the same reason as set forth in claim 1.

Regarding claim 12, the claim is interpreted and rejected for the same reason as set forth in claim 2.

Regarding claim 18, the claim is interpreted and rejected for the same reason as set forth in claim 1.

Regarding claim 19, the claim is interpreted and rejected for the same reason as set forth in claim 9.

Regarding claim 21, Haymes in view of Rahman as applied above discloses a system for monitoring performance of a wireless system, said system comprising: a plurality of wireless devices which transmit communication signals to a radio base station (mobile station and base station are in radio communication, Haymes, Col. 2, lines 44 – 46); a first receiver located at the radio base station which receives the communication signals and transmits the

communication signals to a switch (it is inherent to one of ordinary skill in the art that every base stations has a transceiver); a second receiver located at the radio base station which monitors the communication signals and transmits timestamp data associated with the communication signals to the switch (Haymes, Col. 3, lines 34 – 46); and a system analyzer coupled to the switch which evaluates the performance of the wireless system based on uplink performance parameter and the location of the wireless devices (resource measurer evaluates the performance of the wireless system based on uplink performance parameter, Rahman, Col. 8, line 64 through Col. 9, line 16 and Col. 11, lines 4 – 19).

Regarding claim 30, Haymes in view of Rahman as applied above discloses locating a geographical area associated with faulty coverage based on the performance evaluation (Haymes, Col. 2, line 47 through Col. 3, line 16).

Regarding claim 32, Haymes in view of Rahman as applied above discloses generating an information report concerning signal coverage of geographical area based on the performance evaluation (Haymes, Col. 3, lines 34 – 46).

Regarding claim 33, Haymes in view of Rahman as applied above discloses adjusting the radio base station based on the performance evaluation (Haymes, Col. 7, lines 54 – 62).

Regarding claim 34, Haymes in view of Rahman as applied above discloses wherein the system analyzer is configured to indicate a geographical

location associated with faulty coverage based on the performance evaluation (Haymes, Col. 3, lines 34 – 46).

Regarding claim 35, Haymes in view of Rahman as applied above discloses a method of assessing wireless system performance, comprising: collecting downlink call data associated with a call to a mobile wireless device; collecting uplink call data associated with the call to the mobile wireless device (collecting downlink and uplink data, Rahman, Col. 5, lines 4 – 30 and Col. 11, lines 1 – 19); obtaining location information associated with the mobile wireless device (GPS coordinates, Haymes, Col. 4, lines 37 – 51); and based on the downlink call data, the uplink call data and the location information evaluating system performance (Rahman, Col. 8, line 64 through Col. 9, line 17 and Haymes, Col. 3, lines 34 – 46).

Regarding claim 36, Haymes in view of Rahman as applied above discloses removing transient effects from the system performance evaluation based on the uplink call data and the location information (Rahman, Col. 8, line 64 through Col. 9, line 62 and Haymes, Col. 7, lines 54 – 62).

4. Claims 22 – 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haymes in view of Rahman as applied to claim 21 above, and further in view of Hawkes et al. (US 5,973,643).

Regarding claim 22, Haymes in view of Rahman as applied above does not specifically disclose wherein a time difference of arrival location processor is

coupled to the switch and to the system analyzer. In an analogous art, Hawkes discloses that a time difference of arrival location processor (CPU, Fig. 4, 27) (Hawkes, Col. 15, lines 38 – 40 and Col. 16, lines 39 – 42) is coupled to the mobile switching center and to the central real-time location processor (Hawkes, Col. 5, lines 26 – 29 and Col. 10, lines 56 – 59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Hawkes to the modified system of Haymes and Rahman in order to provide a location system and method for identifying locations of emitters in a service area where the service area is divided into coarse areas.

Regarding claim 23, the claim is interpreted and rejected for the same reason as set forth in claim 21.

Regarding claim 24, the claim is interpreted and rejected for the same reason as set forth in claim 21.

Regarding claim 25, Haymes in view of Rahman and further in view of Hawkes as applied above discloses a second receiver receiving location information using TDOA, which has distortion characteristics of the communication signal (Hawkes, Col. 16, lines 4 – 13).

Regarding claim 26, Haymes in view of Rahman and further in view of Hawkes as applied above discloses wherein the second receiver receives location information from global position system units in each of the plurality of wireless devices (Haymes, Col. 4, lines 37 – 51).

Regarding claim 27, the claim is interpreted and rejected for the same reason as set forth in claim 21.

Regarding claim 28, the claim is interpreted and rejected for the same reason as set forth in claim 22.

Regarding claim 29, the claim is interpreted and rejected for the same reason as set forth in claim 21.

5. Claims 3 – 5, 7, 13 – 15, 17 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haymes in view of Rahman as applied to claim 1 above, and further in view of Hall et al. (US 6,424,837 B1).

Regarding claim 3, Haymes in view of Rahman as applied above does not specifically disclose that the location information of the wireless device is collected from a plurality of cell sites. In an analogous art, Hall discloses that the location information of the wireless device is collected from a plurality of cell sites (Hall, Col. 5, lines 24 – 25 and Col. 6, lines 59 – 61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Hall to the modified system of Haymes and Rahman in order to provide a method by which operational parameters of cellular telephone sites may be monitored on an ongoing basis.

Regarding claim 4, Haymes in view of Rahman and further in view of Hall as applied above discloses that the step of obtaining the location information involves analyzing timestamp data (Hall, Col. 5, lines 26 – 31).

Regarding claim 5, Haymes in view of Rahman and further in view of Hall as applied above discloses that the step of obtaining the location information involves using a time difference of arrival location processor (Hall, Col. 6, lines 50 – 55).

Regarding claim 7, Haymes in view of Rahman and further in view of Hall as applied above discloses that the time difference of arrival location processor is in the wireless system (Hall, Col. 6, lines 50 – 55).

Regarding claim 13, the claim is interpreted and rejected for the same reason as set forth in claim 3.

Regarding claim 14, the claim is interpreted and rejected for the same reason as set forth in claim 4.

Regarding claim 15, the claim is interpreted and rejected for the same reason as set forth in claim 5.

Regarding claim 17, the claim is interpreted and rejected for the same reason as set forth in claim 7.

Regarding claim 31, Hall in view of Rahman as applied above discloses wherein the evaluation is based on mobile-assisted handoff information (Hall, Col. 4, lines 5 – 31).

6. Claims 6, 10, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haymes in view of Rahman and further in view of Hall as applied to claim 5 above and further in view of Kong (US 6,275,186).

Regarding claim 6, Haymes in view of Rahman and further in view of Hall as applied above does not specifically disclose that the time difference of arrival location processor is in the wireless device. In an analogous art, Kong discloses that the TDOA location processor (Fig. 3A, 320) is in the mobile station (Kong, Col. 7, lines 19 – 45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Kong to the modified system of Haymes, Rahman and Hall in order to provide a device and method for locating an mobile station by measuring the Time Difference Of Arrivals and Signal-to-Interference Ratios of forward pilots received from neighbor base stations in a mobile communication system operated in synchronization.

Regarding claim 10, Haymes in view of Rahman, further in view of Hall and further in view of Kong as applied to claim 6 above discloses obtaining location information of the mobile station is accomplished using RF finger printing using dispersion characteristics of the communication signal (Kong, Col. 7, lines 28 – 38).

Regarding claim 16, the claim is interpreted and rejected for the same reason as set forth in claim 6.

Regarding claim 20, the claim is interpreted and rejected for the same reason as set forth in claim 10.

Response to Arguments

7. Applicant's arguments with respect to claims 1 – 36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Un C. Cho whose telephone number is (571) 272-7919. The examiner can normally be reached on M ~ F 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Un C Cho
Examiner
Art Unit 2687

2/5/05 UC



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SUPERVISORY PRIMARY EXAMINER